UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,502	02/24/2004	Adnan Shennib	022176-000210US	4013

20350 7590 03/02/2007

TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
PENDLETON, DIONNE	
ART UNIT	**PAPER NUMBER**
2615	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/02/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/786,502	SHENNIB ET AL.	
	Examiner	Art Unit	
	Dionne H. Pendleton	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *30 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *104-126 and 128-130* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claim 130** is rejected under 35 U.S.C. 102(b) as being anticipated by **Ward (U.S. 5,201,007).**

Regarding claim 130, **in figure 6,** Ward teaches a canal sound conduction tube comprising a tube portion **60** for insertion into the ear canal of a user in proximity to the eardrum; wherein the tube **60** has a skeletal support structure **90** in **figure 7,** with sufficient axial rigidity to maintain patency of the tube portion when the tube portion is inserted and rotated within the ear canal; and

Means **70** operatively associated with the tube portion **60** for delivering sounds to an acoustically sealed space about the eardrum;

And means **85** operatively associated with the tube portion and the hearing device for concurrently directing occlusion sounds away from the ear drum when worn by the user.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim **104-126, 128 and 129** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ward (U.S. 5,201,007)** in view of **Fretz (U.S. 7,027,608)**.

Regarding claim 104, in **figure 6,** Ward teaches a tubular insert comprising:

A radially flexible sound conduction tube **60,** connected to a receiver section **94, shown in figure 3,** of a hearing device **90**, for delivering sound to the tympanic membrane **30**; and wherein the tube **60** has a skeletal support structure **90** in **figure 7,** with sufficient axial rigidity to maintain patency of the tube portion when the tube portion is inserted and rotated within the ear canal; and

A first concentric seal **70** projecting radially from the sound conduction tube **60** for engaging the bony part of the ear canal and forming a first confined space between the seal and tympanic membrane; said seal having a small pressure vent **76** (as shown in **figure 5A**); and also shown in **figure 6,** a second concentric seal **82** projecting from the sound tube **60** and forming a second confined space between seals, shown in **figure 7**, said second seal has a relatively larger occlusion relief vent **85** extending there through, also see ***column 6, lines 56-60***.

Ward does not clearly teach that the sound conduction tube **60** is removably connected to a receiver section of a hearing device.

However, shown in **figure 1 and figure 5,** Fretz, in ***column 6, line 64 through column 7, line 1***, as well as ***column 7, lines 19-23*** and ***column 31-35,*** teaches that a tubular insert **20** for transmitting an audio signal to the wearer's ear canal, which may be removably connected to the receiver section **34** of a hearing device.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Ward and Fretz, providing a sound conduction tube which may be removably connected to the receiver section of a hearing device, thereby permitting the wearer to choose between a variety of sound conduction tubes of different lengths, etc, so as to accommodate ears of varying sizes and dimensions (***see column 3, lines 12-25***).

Regarding claim 105, Fretz, teaches a sound conduction tube which may be selectively replaced.

Regarding claim 106, in **column 5, lines 9-10**, Ward teaches that the sound tube may be rigid or semi-rigid so that the tube may be inserted into the ear canal and retain its shape, thereby reading on "kink-resistance and non-collapse", as claimed.

Regarding claim 107, **column 3, lines 12-25** of Fretz teaches that the sound conduction tube has generic configurations and sizes to accommodate a variety of ear canal sized and shapes.

Regarding claim 108, **in figure 7,** Ward teaches that the sound conduction tubing comprises multiple tubing **60,82** for multiple channel sound conducting or venting via plurality of channels **85.**

Regarding claim 109, Ward and Fretz appear to teach that the sound conduction tube is at least 8mm in length.

Regarding claim 110, **column 5, lines 64-66,** Fretz teaches that the sound tube has an inner diameter of about 0.7mm, reading on "not greater than 2mm" as claimed.

Regarding claim 111, Ward teaches that the sound conduction tube **60**, which includes seal member **70** with vent holes **76**, is constructed such that audio feedback in the high frequencies is prevented, see **column 6, lines 32-35**, thereby reading on "provide a boost for conducted sounds at the high range of audiometric frequencies."

Regarding claim 112, Ward teaches that the first concentric seal **70** includes a pressure vent **76** in the form of a hole not greater than 0.5mm (see **column 6, lines 31-32**).

Regarding claim 113, Ward teaches that the pressure vent **76** is directly on the first concentric seal **70**.

Regarding claim 114, Ward teaches that the pressure vent **76** is indirectly incorporated along said sound conduction tube **60**.

Regarding claim 115, in **figure 5B and 5D and 5E**, Ward teaches that the sound conduction tube extends medially past the first seal **70**.

Regarding claim 116, as shown in **figures 5C**, Ward teaches that the seal is hollow of cylindrical shape.

Regarding claim 117, Ward teaches that the seals are flanged (**figure 5A**), mushroom shaped (**figure 5E**) or clustered (**figure 7**), as broadly claimed.

Regarding claim 118, Ward teaches that the cross-sectional perimeter of said seal is circular, elliptical or oval, as shown in **figures 5A, 5F and figure 7.**

Regarding claim 119, Ward teaches, in **column 5, lines 32-36,** that the seals have a span of at least 2mm.

Regarding claim 120, in **column 5, lines 37-39**, Ward teaches the use of materials suitable for use in human body cavities, reading on "antibacterial and anti-microbial".

Regarding claim 121, The combination of Ward and Fretz fails to explicitly teach that the seals comprise lubricant to facilitate insertion and removal of the tubular insert into and from the ear canal. However, it is well known in the art that the ear canals typically contains perspiration and/or earwax, both lubricants. Therefore, Ward and Fretz each inherently teach a lubricant, for facilitating insertion and removal of the tubular insert into and from the ear canal, as claimed.

Regarding claim 122, **in figure 2,** Fretz teaches means for removably connecting **16,36** the sound conduction tube **20** to said receiver section **34**.

Regarding claim 123, **in figure 1,** Fretz teaches that the connecting means comprises a snap-on, threaded, spring-loaded, pressure-fit, or side-slide mating mechanism.

Regarding claim 124, Fretz teaches a tube connector **38** for coaxial connection of the tubular insert and receiver section.

Regarding claim 125, Ward teaches that the apparatus is for amplifying sound to the ear, reading on "for hearing enhancement of a hearing impaired wearer".

Regarding claim 126, Ward teaches that the sound tube is for connection to a hearing aid **90,** reading on "adapting said tubular insert for audio communications" as broadly claimed.

Regarding claim 128, Ward teaches a tubular insert for an ear canal of a wearer, comprising: a sound conduction tube **60** constructed and adapted for connection to a sound receiver module ***(see 90,94 in figure 3)*** of a hearing device, for comfortable insertion into and removal from the ear canal, and when inserted, to deliver sound received by the module to the tympanic membrane ***30*** wherein the tube **60** has a skeletal support structure **90** in **figure 7,** with sufficient axial rigidity to maintain patentcy of the tube portion when the tube portion is inserted and rotated within the ear canal;

and as shown in figure 6, at least one appendage **70** on the sound conduction tube **60** to establish a substantially acoustically sealed space in which the sound is to be delivered to the tympanic membrane 30; and another appendage **82** is provided on the sound conduction tube ***s illustrated in figure 6 and figure 7,*** or on the sound receiver module for cooperating with said at least one appendage **70** to direct occlusion sounds away from the tympanic membrane ***via passageway 85 (also see column 6, lines 56-60)*** when said tubular insert is connected to said sound receiver module and worn in the ear canal.

Ward does not clearly teach that the sound conduction tube **60** is removably connected to a receiver section of a hearing device.

However, Fretz, in ***column 6, line 64 through column 7, line 1***, as well as ***column 7, lines 19-23*** and ***column 31-35,*** teaches that a tubular insert **20** for transmitting an audio signal to the wearer's ear canal, may be removably connected to the receiver section **34** of a hearing device.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Ward and Fretz, providing an sound conduction tube which may be removable connected to the receiver section of a hearing device, thereby permitting the wearer to choose between a variety of sound conduction tubes of different lengths, etc, so as to accommodate ears of varying sizes and dimensions (***see column 3, lines 12-25***).

Regarding claim 129, Ward teaches a sound conduction channel (see hollow sound transmitting construction of tube **60**), coupled to the sound conduction tube **60** for delivering sound to the tympanic membrane **30** within an acoustically sealed space (sealed via sealing element **70**); and a second sound conduction channel **85** (provided by sealing element **82**) simultaneously directing occlusion sounds away from the tympanic membrane (***see column 6, lines 56-60***), said second conduction channel including a directional feature **90** to direct occlusion sounds away from the tympanic membrane;

And wherein the central axis of tube **60,** lies in a different plane that that of the central axis of passages **85** in **figure 7**, thereby reading on "wherein the first and second sound conduction channels are non coaxially positioned with respect to one another" .

Ward does not clearly teach that the sound conduction tube **60** is removably connected to a receiver section of a hearing device.

However, Fretz, in ***column 6, line 64 through column 7, line 1***, as well as ***column 7, lines 19-23*** and ***column 31-35,*** teaches that a tubular insert **20** for transmitting an audio signal to the wearer's ear canal, may be removably connected to the receiver section **34** of a hearing device.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Ward and Fretz, providing an sound conduction tube which may be removable connected to the receiver section of a hearing device, thereby permitting the wearer to choose between a variety of sound conduction tubes of different lengths, etc, so as to accommodate ears of varying sizes and dimensions (***see column 3, lines 12-25***).

Response to Arguments

3. Applicant's arguments filed 11/30/2006 have been fully considered but they are not persuasive.

4. The Examiner acknowledges and thanks the Applicant for pointing out those features in the Drawings initially objected to in the Official Action dated 05/30/2006.

5. Regarding the Applicant's argument that ***The Examiner Provides No Teaching, Suggestion Or Motivation To Combine Ward With Fretz In The Manner Claimed***:

The Examiner disagrees with the Applicant's assertion and points to the last paragraph in page 4 of the Official Action mailed 5/30/2006.

6. Regarding the Applicant's argument that ***Ward Provides No Teaching That Tube 82 Is A Seal:***

Figure 6 in the Ward reference illustrates a flush positional arrangement between the ear canal of the wearer and the tube **82**. Also, see **col. 6, ln 43-45 and 56-60**, wherein the passage suggests that the support provided to tube **60** via support members **90** is such that the support members **90** are not movable so as to block the vent passages **85**. This implies a flush and sealing arrangement between the tube **82** and the ear canal walls, since the tube **82** will only insure that support member **90** will not vary in location, if it is positioned within the ear canal in an anchored i.e., sealing manner. Also, note that the outer periphery of tube **82** is continuous and does not include any apertures or corrugations, thereby adding to the "seal" properties.

7. Regarding the Applicant's argument that ***While Fretz Teaches Tubes Having Different Lengths, Fretz Fails To Teach Tubes Having Variation In Shape Or Diameter***:

The Examiner cites **col. 3, ln 18-19** wherein Fretz teaches a plurality of tubes, each having a preformed "shape". As it would be unreasonable to assume a plurality of tubes have the same shape, said disclosure in the Fretz reference is interpreted as teaching a variety of shaped tubes provided in the "kit of parts."

The Examiner also cites **col. 3, ln 22-24** and the recitation therein of tubes differing in length. The Examiner therefore maintains the position that Fretz teaches tubes of different shapes and lengths, as claimed.

8. Regarding the Applicant's argument that ***Neither Fretz Nor Ward Include A Sound Conduction Tube At Least 8mm In Length:***

The Examiner emphasizes **column 5, lines 36-39** wherein Fretz teaches a tube having a duct length (Ld) between 1.4-1.7 cm, which reads on "at least 8mm". Additionally, **column 5, lines 34-36** of Ward teaches that tip **70** has a depth of approx. 2-8 millimeter. Therefore, since the tube length is at least as long as the depth of tip **70** **(see figure 5E)**, the sound conduction tube of Ward is "at least 8mm" as claimed.

9. Regarding the Applicant's argument that ***Ward Fails To Teach That The Seal Diameter Is Less Than 2mm:***

Please see the rejection of claim **110** above, wherein the Examiner relies upon **column 5, lines 64-66** of the Fretz reference for its' teaching of a sound tube having an inner diameter not greater than 2mm. Since the claim was previously rejected over the combined teachings of Ward in view of Fretz, and since the claim is presently anticipated by the identical combination of prior art, this reliance upon Fretz as more clearly teaching the claimed limitations is not considered new grounds for rejection and is made final.

10. Regarding the Applicant's argument that ***Ward Provides No Teaching Of A Boost For Conducted Sounds:***

The Applicant has failed to more clearly define the term "boost" in the claim. Therefore, since Ward prevents acoustic feedback in the high frequency range for the purpose of more efficiently reproducing high frequency output, the Examiner has interpreted this optimizing of reproduced signals in the high frequency range as the "boost" recited in the claims. The rejection is therefore maintained.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action. Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dionne H. Pendleton whose telephone number is 571-272-7497. The examiner can normally be reached on 9-5:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Dionne Harvey Pendleton

HUYEN LE
PRIMARY EXAMINER